CLAIMS

1. An isolated nucleic acid sequence encoding a hexon polypeptide or a functional derivative thereof comprising a hexon hypervariable regions-encompassing polypeptide having the amino acid sequence of SEQ ID NO: 1 or an amino acid sequence which is at least 95% identical over its entire length to the amino acid sequence of SEQ ID NO: 1 .

2. The isolated nucleic acid sequence of claim 1, wherein the hexon polypeptide comprises a hexon hypervariable regions-encompassing polypeptide having the amino acid sequence of SEQ ID NO: 1.

3. The isolated nucleic acid sequence of claim 2, wherein the hexon polypeptide or the functional derivative thereof comprises the amino acid sequence of SEQ ID NO: 2 or an amino acid sequence which is at least 95% identical over its entire length to the amino acid sequence of SEQ ID NO: 2.

4. The isolated nucleic acid sequence of any one of claims 1-3, further comprising a nucleic acid sequence encoding a fiber polypeptide or a functional derivative thereof.

5. The isolated nucleic acid sequence of claim 4, wherein the fiber polypeptide comprises at least one selected from the group consisting of: (1) a fiber knob polypeptide sequence comprising the amino acid sequence of SEQ ID NO: 10, (2) a fiber shaft polypeptide sequence comprising the amino acid sequence of SEQ ID NO: 11, and (3) a fiber tail polypeptide sequence comprising the amino acid sequence of SEQ ID NO: 12, preferably, the fiber polypeptide or a functional derivative thereof comprises the amino acid sequence of SEQ ID NO: 3 or an amino acid sequence which is at least 95% identical over its entire length to the amino acid sequence of SEQ ID NO: 3.

6. An isolated nucleic acid sequence encoding a fiber polypeptide comprising at least one selected from the group consisting of: (1) a fiber knob polypeptide sequence comprising the amino acid sequence of SEQ ID NO: 10; (2) a fiber shaft polypeptide sequence comprising the amino acid sequence of SEQ ID NO: 11, and (3) a fiber tail polypeptide sequence comprising the amino acid sequence of SEQ ID NO: 12.

7. The isolated nucleic acid sequence of claim 6, wherein the fiber polypeptide comprises the amino acid sequence of SEQ ID NO: 3.

8. A vector comprising the nucleic acid of any of claims 1-7.

9. The vector of claim 8, being an adenoviral vector, and further comprising a transgene.

10. The adenoviral vector of claim 9, wherein the adenoviral vector further comprises at least one of an El deletion and an E3 deletion.

11. The adenoviral vector of claim 9 or claim 10, wherein the adenoviral vector is a chimeric adenoviral vector comprising one or more human adenoviral nucleic acid sequences, preferably the human adenoviral nucleic acid sequences are from at least one of human adenovirus-4, human adenovirus-5, human adenovirus-26, or human adenovirus-35.

12. The adenoviral vector of any one of claims 9-11, wherein the adenoviral vector comprises a nucleic acid sequence selected from the group consisting of SEQ ID NO: 13 and SEQ ID NO: 14.

13. A recombinant cell comprising the vector of any one of claims 8-12.

14. A method of producing a vector, comprising;

(a) growing the recombinant cell of claim 13, under conditions for production of the vector; and

(b) isolating the vector from the recombinant cell.

15. An immunogenic composition comprising the adenoviral vector of any one of claims 9-12.

16. An immunogenic composition of claim 15 for use in inducing an immune response in a subject in need thereof.

17. A method of producing a vaccine, comprising combining an adenoviral vector according to any one of claims 9-12, with a pharmaceutically acceptable carrier.